a plurality of current sources connected to the summing node, each current source further comprising at least one transistor, and each current source supplying a current to the summing node and being connected to a power supply voltage, wherein the currents sources supply currents according to a bandgap equation:

$$K_1 (V_{CC} - V_T) + K_1 V_T = K_2 V_{BE} + K_3 (kT/q)$$

where Vcc is the power supply voltage, $V_T$ is [the] a predetermined threshold voltage [which defines the minimum acceptable voltage of Vcc] of a transistor in a first current source within the plurality of current sources, $V_{BE}$ is a base emitter voltage [defined by a selected transistor which comprises a current source within the plurality of current sources] of a transistor in a second current source within the plurality of current sources, [and kT/q is equal to a thermal voltage where] k is Boltzman's constant, T is [the] a temperature in kelvin of a transistor in a third current source within the plurality of current sources, q is [the] an electronic charge constant, and $K_1$, $K_2$, and $K_3$ are constants determined by a resistance and a transistor length in the first, second, and third current sources, respectively; and

an indicator circuit having an input connected to the summing node and generating a logical signal at an output, responsive to voltage changes in the summing node.

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4. (amended three times) A direct current sum bandgap voltage comparator comprising:

a summing node;

a plurality of current sources connected to the summing node, each current source further comprising at least one transistor, and each current source supplying a current to the summing node and being connected to a power supply voltage; and

an indicator circuit having an input connected to the summing node and generating a logical signal at an output, responsive to voltage changes in the summing node, wherein the currents sources supply currents according to a bandgap equation:

$$K_1(V_{CC}-V_T)+K_1V_T=K_2V_{BE}+K_3(kT/q)$$

where Vcc is the power supply voltage, $V_T$ is [the] a predetermined threshold voltage [which defines the minimum acceptable voltage of Vcc] of a transistor in a first current source within the plurality of current sources, $V_{BE}$ is a base emitter voltage [defined by a selected transistor which comprises a current source within the plurality of current sources] of a transistor in a second current source within the plurality of current sources, [and kT/q is equal to a thermal voltage where] k is Boltzman's constant, T is [the] a temperature in kelvin of a transistor in a third current source within the plurality of current sources, q is [the] an electronic charge constant, and $K_1$, $K_2$, and $K_3$ are constants determined by a resistance and a transistor length in the first, second, and third current sources, respectively, and wherein the plurality of current sources comprises four current mirrors.

13~~14~~. (amended three times) A zero power circuit comprising:

a first circuit;

a direct current sum bandgap voltage comparator comprising:

a summing node;

a plurality of current sources connected to the summing node, each current source further comprising at least one transistor, and each current source supplying a current to the summing node and being connected to a power supply voltage, wherein the current sources supply according to a bandgap equation:

$$K_1 (V_{CC} - V_T) + K_1 V_T = K_2 V_{BE} + K_3 (kT/q)$$

where Vcc is the power supply voltage, $V_T$ is [the] a predetermined threshold voltage [which defines the minimum acceptable voltage of Vcc] of a transistor in a first current source within the plurality of current sources, $V_{BE}$ is a base emitter voltage [defined by a selected transistor which comprises a current source within the plurality of current sources] of a transistor in a second current source within the plurality of current sources, [and kT/q is equal to a thermal voltage where] k is Boltzman's constant, T is [the] a temperature in kelvin of a transistor in a third current source within the plurality of current sources, q is [the] an electronic charge constant, and $K_1$, $K_2$, and $K_3$ are constants determined by a resistance and a transistor length in the first, second, and third current sources, respectively;

an indicator circuit having an input connected to the summing node and generating a logical signal at an output, responsive to changes in the summing node; and

a switching circuit for providing power to the first circuit from a primary power supply and a secondary power supply, the switching circuit being connected to the output of the indicator circuit, wherein power from the primary power supply is supplied to the first circuit if the logical signal indicates that the power supply voltage is equal to or greater than the predetermined threshold voltage and power from the secondary power supply is supplied to the first circuit if the power supply voltage is less than the predetermined threshold voltage.

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14, 17. (amended three times) A zero power circuit comprising:

a first circuit;

a direct current sum bandgap voltage comparator comprising:

a summing node;

a plurality of current sources connected to the summing node, each current source further comprising at least one transistor, and each current source supplying a current to the summing node and being connected to a power supply voltage;

an indicator circuit having an input connected to the summing node and generating a logical signal at an output, responsive to changes in the summing node; and

a switching circuit for providing power to the first circuit from a primary power supply and a secondary power supply, the switching circuit being connected to the output of the indicator circuit, wherein power from the primary power supply is supplied to the first circuit if the logical signal indicates that the power supply voltage is equal to or greater than the preselected voltage and power from the secondary power supply is supplied to the first circuit if the power supply voltage is less than the preselected voltage, wherein the current sources supply according to a bandgap equation:

$$K_1 (V_{CC} - V_T) + K_1 V_T = K_2 V_{BE} + K_3 (kT/q)$$

where Vcc is the power supply voltage, $V_T$ is [the] a predetermined threshold voltage [which defines the minimum acceptable voltage of Vcc] of a transistor in a first current source within the plurality of current sources, $V_{BE}$ is a base emitter voltage [defined by a selected transistor which comprises a current source within the plurality of current sources] of a transistor in a second current source within the plurality of current sources, [and kT/q is equal to a thermal voltage where] k is Boltzman's constant, T is [the] a temperature in kelvin of a transistor in a third current source within the plurality of current sources, q is [the] an electronic charge constant, and $K_1$, $K_2$, and $K_3$ are constants determined by a resistance and a transistor length in the first, second, and third current



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